Inside Wallops

National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility, Wallops Island, Va. Volume XX-06 Number 05 February 13, 2006

MSU Rocket Roars Into Space Above New Mexico Desert

by Annette Trinity-Stevens, MSU News Service

A NASA sounding rocket carrying a payload built at Montana State University, MSU, blasted 175 miles into space above New Mexico's White Sands Missile Range shortly before noon on Wednesday, February 8.

MSU photo by Jay Thane

MSU graduates Greg Stevens and Hans Courrier assemble the payload last October in a clean room on campus.

The 1,000-pound payload, which included an optical bench equipped with high-resolution cameras, took pictures of the sun before touching down underneath a parachute about 80 kilometers down range. The flight ended in 896 seconds, or about 15 minutes.

Last-minute concerns about the rocket's guidance system slowed the launch.

"I thought, it's not going to happen. It's not going to go," MSU assistant physics professor and project leader, Charles Kankelborg said. "Then it went shoosh,"

Delayed three times since last August, the launch of the 60-foot rocket capped five years of work. It was the first NASA rocket payload ever built in Montana, according to physics department head Bill Hiscock.

The project is called MOSES, for multi-order solar extreme ultraviolet spectrograph. Equipped with sensors similar to those on digital cameras, the payload gathered high-resolution images of a broad section of the sun.

The payload also gathered detailed information on each pixel from the extreme ultraviolet portion of the electromagnetic spectrum.

Rich Parker assumed that as a mechanical engineering student he would design and build things but a rocket payload?

"I never expected to be involved in a NASA-supported project," said Parker who was one of three students who watched the launch at the missile range with Kankelborg.

Up to 30 students at a time worked on the project. Most were studying engineering, physics or computer science. The students machined parts, designed electrical and cooling systems and wrote software. Others assembled the payload in a clean room at MSU.

"I was really fortunate to work on something of this caliber," said Michael Chase, who graduated in 2003. Chase designed and built the housings for the digital sensors.

Chase said his more than four years on the project helped him land a job after graduation. The Nampa, Idaho, native is working for the high-tech S2 Corporation in Bozeman.

Editor's Note: The article from the Montana State University News Service is reprinted with permission.

Photo by James Mason-Foley

The Wallops Flight Facility recently hosted officials from several regional universities and colleges to showcase Wallops capabilities and to continue discussions on developing education and research partnerships. Those represented included the University of Maryland Eastern Shore, Wor-Wic Community College, Eastern Shore Community College, Old Dominion University and Hampton University. The participants were pleased with the insight into Wallops activities and excited about the prospects of strengthening their ties with the Facility.

Wallops Shorts.....

Launch

A NASA Terrier Black Brant sounding rocket was launched from White Sands Missile Range, N.M., on February 8. The mission was to demonstrate a proof concept for a new extreme ultraviolet (EUV) imaging spectrograph. Dr. Charles Kankelborg, Montana State University, was the principal investigator. Bill Payne, NASA Sounding Rocket Operations Contract, was the mission manager. The payload was recovered and experiment data is being assessed.

Water ingestion tests

Water ingestion requirements for Eclipse Aviation's new Eclipse 500 aircraft were completed last week at the Wallops Airport. A total of 24 test runs were completed using runway 04/22.

Wallops Helps Make Stardust a Successful Mission

NASA's Comet Sample Return Mission, Stardust, was launched from Cape Canaveral Air Station on a Delta 2 rocket Feb. 7, 1999. In 2004, nearly 242 million miles from earth, Stardust encountered Comet Wild 2. En route to the comet, the spacecraft collected interstellar dust particles.

On it's return trip, the Stardust sample return capsule entered the earth's atmosphere in the early morning hours of Jan. 15, 2006, completing a very successful mission. A NASA DC-8 aircraft, flying at the eastern edge of the Nevada state line, captured the capsule on video as it descended to a soft landing in the US Air Force's Utah Test and Training Range at 3:10 a.m. MST.

The Stardust capsule, above, was visible from parts of Nevada and Utah when it returned. Researchers, participating in the Stardust Capsule Reentry Observing Campaign, onboard the DC-8 detected the bright fireball and obtained data. The meteor was first blueish in color and then became a deep red. It was bright, slow, and glorious, and pulled a wake lasting tens of seconds.

Thanks to the DC-8 team all of the observing campaign goals were met. They were able to measure light identified as coming from the hot surface, emissions from the shock, emissions from ablated carbon reacting with the shock, and trace metal atom impurities in what is presumably the heat shield material.

Members of the DC-8 team from Wallops included George Postell, NASA Aircraft Office; Dave Easmunt and Peter Turlington, NASA Range and Mission Management Office; Mike Cropper, NASA Mechanical Systems Branch; and Brenda Mulac, LJT.

Results of the Sub-TEC Mission

The 12.063 GT mission, flown on December 20, 2005, was a demonstration test flight of the Terrier clamp release system, the first flight of the Suborbital Technology Experiment Carrier (Sub-TEC) payload and served as the first rocket borne test flight of an advanced range technology experiment, STARS, (Space-based Telemetry and Range Safety).

"The only system to not work properly was a commercial off-the-shelf GPS locator system that used the Iridium satellite phone network to relay its position.

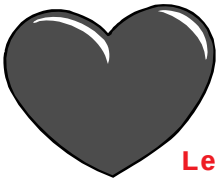
I feel the Sub-TEC mission was an outstanding success. The NSROC project team took this payload from concept to launch in less than 7 months. This was a very aggressive schedule and the project team stepped up to the challenge and should be commended. The Code 840 range personnel also did an outstanding job in conducting launch operations.

Our co-investigators from Kennedy Space Center were impressed with our ability to build and fly a mission in such a short period of time and with the professionalism of our launch operations team....."

John Hickman
NASA WFF Principal Investigator

February

is Heart Month



Are you taking care of yours?

Learn and know the signs of heart attack and stroke.

Happy Valentine's Day!

2001 Chrysler Voyager Mini-Van, excellent condition. 56,000 miles. $7200, OBO. Call Melody Lewis at (757) 854-1844 after 5 p.m.

Presidents' Day is February 20

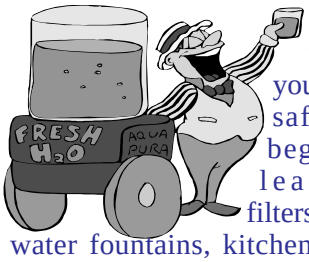
Until 1971, February 12 and February 22 were observed as federal public holidays to honor the birthdays of Abraham Lincoln (February 12) and George Washington (February 22). In 1971 President Richard Nixon proclaimed one single federal public holiday, the Presidents' Day, to be observed on the 3rd Monday of February, honoring all past presidents of the United States of America.

Wallops Water Words

by Josh Bundick, Environmental Office

The Virginia Health Department requires Wallops to test for an extensive list of substances to ensure that our drinking water is safe. Our water has consistently proven to be of the highest quality with the exception of one substance.

Due to the age of this Facility, several buildings typically show elevated lead levels when sampled under the required, unfiltered, "worst case scenario" conditions. During the last sampling event in late 2003, the buildings that exceeded the Health Department's action level of 15 parts per billion were Buildings CG-7C, CG-11C, D-4, E-107, F-10, F-16, F-20, F-160, U-55, U-70, V-50, and X-15. These results are actually typical of any aging water distribution system, including your home if it was built prior to 1986.



To make sure that the water you're drinking is safe, Wallops began to install lead-removing filters in 1997 on all water fountains, kitchen sinks and ice machines. These filters have been tested by the Wallops Chemistry Laboratory and have demonstrated removal of at least 98.5 percent of lead in a drinking water sample. If properly maintained, these filters bring lead levels well below drinking water standards. To ensure that these filters are working properly, the WICC team changes them every six months. The filtered water that you drink is actually of the same quality as bottled water!

In addition to filtration, chemical treatment systems have been installed at the Main Base and Island/Mainland water systems. These systems work continually to reduce the amount of lead that enters our drinking water.

For further information, contact Wayne Redmond at x1191 or Josh Bundick at x2319. Any requests for filter installation or maintenance should be directed to the Wallops HELP Desk at x4357.

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees. Recent and past issues of *Inside Wallops* also may be found on the NASA Wallops Flight Facility homepage: www.wff.nasa.gov

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